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A Summary of Current Program 10/1/67

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and Preliminary Report of Progress

for 10/1/66 to 9/30/67

FOREIGN DEVELOPMENT AND TRADE DIVISION

of the

ECONOMIC RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

and related work of the

STATE AGRICULTURAL EXPERIMENT STATIONS

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This progress report is primarily a tool for use of scientists and administrators in program coordination, development and evaluation; and for use of advisory committees in program review and development of recommendations for future research programs.

The summaries of progress on USDA and cooperative research include some tentative results that have not been tested sufficiently to justify general release. Such findings, when adequately confirmed, will be released promptly through established channels. Because of this, the report is not intended for publication and should not be referred to in literature citations. Copies are distributed only to members of Department staff, advisory committee members and others having a special interest in the development of public agricultural research programs.

This report also includes a list of publications reporting results of USDA and cooperative research issued between October 1, 1966 and September 30, 1967. Current agricultural research findings are also published in Agricultural Economics Research; Foreign Agricultural Trade of the United States; and Foreign Gold and Exchange Reserves. This progress report was compiled in the Foreign Development and Trade Division, Economic Research Service, U.S. Department of Agriculture, Washington, D.C.

UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D.C.

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INTRODUCTION

Foreign development and trade research is concerned with four areas: effects of foreign economic development on agriculture; appraisal of agricultural export programs and market development; international monetary and trade analysis; and the analysis and evaluation of United States and world agricultural trade. The research objectives include appraisal and evaluation of the economic implications of policies and programs on U.S. foreign trade in agricultural products and the efficient use of U.S. produced food and other resources in economic development programs abroad. This information is employed in the formulation of national policies, positions, and programs in the four areas set forth above.

Research on foreign economic development and trade is carried out in the Foreign Development and Trade Division of the Economic Research Service of the U.S. Department of Agriculture. During the period of this report--October 1, 1966 to September 30, 1967--approximately 28.4 scientist man-years were devoted to research in the areas of foreign economic development and trade research, distributed as follows: 9.3 to Effects of Foreign Economic Development on Agriculture; 1.5 to Export Programs and Market Development; 8.6 to International Monetary and Trade Research; and 9.0 to Trade Statistics and Analysis.

Fiscal year 1966-67 is the eighth consecutive year in which U.S. exports of agricultural products have increased. The increase in value of exports from fiscal year 1966 to fiscal year 1967 was \$89 million, to \$6.8 billion total. Exports of cotton and tobacco increased greatly, with smaller gains in oilseeds and products and in vegetables and preparations. Exports of grains and preparations actually declined 6 percent and animals and animal products 8 percent. All commodity groups and most individual commodities produced in the U.S. participate in the export markets. Wheat and flour, including P.L. 480 shipments, had the largest value, while oilseeds and products and feed grains led in commercial exports.

Examples of Results From Research Covered in this Report

Agricultural Exports at Record Level of \$6.8 billion in Fiscal 1967.

At \$6,766 million, agricultural exports during fiscal year 1967 were up slightly from the past record of \$6,677 million during the preceding year. Cotton and tobacco led in increases, supported by lesser gains in oilseeds and products and vegetables and preparations. These more than offset declines in animals and animal products, fruits, and wheat and feed grains. Wheat and feed grains declined by 14 percent. Some factors affecting feed grains were higher prices for U.S. grains, improved supplies in Europe, and increased competition from other exporting countries. Tobacco exports benefited from United Nations sanctions against Rhodesia, the quality characteristics of flue-cured varieties from the U.S. and Government export programs. A new program made cotton exports more competitive, and foreign demand to replenish stocks was high.

U.S. Agricultural Imports Totaled \$4.5 Billion in Fiscal Year 1967.

U.S. agricultural imports totaled \$4,454 million in fiscal year 1967, the same as the previous year. However, supplementary (partially competitive) products increased 8 percent and complementary (noncompetitive) products decreased 10 percent. The increase in supplementary products was primarily in beef, veal, dairy products, sugar, vegetables, and fruits--partially offset by declines in apparel wool, hides and skins, and dutiable cattle. An 11 percent decline in volume of coffee and 0.2 cent in price per pound accounted for most of the decline in complementary products. There were also small declines in crude rubber, hard fibers, silk, and carpet wool. Bananas and cacao increased, the latter with price rises more than offsetting decline in volume.

Export Market Benefits Many U.S. Farmers. An estimated 70 million acres were required to produce the agricultural exports of fiscal 1967--the equivalent of 1 out of every 4 harvested acres in the U.S. On a value basis, exports were 16 percent of total farm marketings. Export markets absorbed over 80 percent of the dried edible beans and peas; over 40 percent of the wheat, tallow, cotton, hides and skins, and hops; over a third of the tobacco, soybeans, grain sorghums, and dried prunes; and over a fifth of the nonfat dry milk and raisins.

Regionalization and U.S. Trade. Projections were made of feed grain consumption in 1970 and 1975 in the European Economic Community, the most important commercial export market for U.S. feed grains. Consumption was

about 39 million metric tons in 1965 and is expected to reach 49 million by 1970 and 58 million by 1975. These projections are subject to 3 broad conditions: (1) consumption of meat continues to expand at the assumed rate, (2) the EEC maintains the 1962-64 level of self-sufficiency in meat and becomes self-sufficient in poultry and eggs, and (3) projected changes in feeding rates are realized.

Projections of oilmeal consumption in the EEC by 1970 indicate it will be 55 to 70 percent greater than in 1962-63. About 55 percent of the projected consumption level of 8.2 to 8.8 million metric tons is expected to be soybean meal compared to 40 percent of the consumption in the base years, and about 8 million tons of the total will be imported.

Analysis of changes occurring in the organization of agriculture in EEC conclude that prospects are dim for third countries to export soft wheat, poultry, pork, and dairy products to the EEC--in fact the EEC is likely to be a competitor in supplying world markets. However, the prospects are favorable that the EEC will continue to be a major importer of feed grains and beef.

Trade Policies and Demand Relationships. Comprehensive data on world trade in feed grains have been compiled and study of the world meat economy launched as a basis for intensive study of the world market for feed grains. Initial review of the position of Japan, the largest single-country market for U.S. agricultural commodities, indicates that their demand for livestock products will continue to grow substantially over the next decade, as will domestic production, and nearly all the coarse grains used for feed will be imported. Grain price decisions and foreign trade policies of the Japanese Government will affect the level of such imports. Any slow-down in economic growth and restrictions on consumer incomes could slow the current upgrading of consumer diets, hence less rapid increases in feed grain demand. Studies indicate Japan may turn increasingly to Southeast Asia for both rice and feed grains.

Effects of Economic Development Upon Patterns of Foreign Trade. The market for U.S. agricultural products is closely associated with economic growth of the importing countries and varies with the levels of incomes. For countries with low levels of development, per capita imports increased 25 percent for each 10 percent increase in per capita income while in the middle-income range the growth in imports kept pace with income growth, and in the high-income countries imports increased only 7.8 percent for each 10 percent rise in income. While the high-income countries are the major markets for commercial exports, and can be expected to continue so, the tremendous import response to growth by the low-income countries emphasizes the potential undeveloped demand.

The composition of import demand changes with increasing income levels associated with economic growth, shifting from staples to animal products and other more income-elastic commodities. This is reflected in the composition of U.S. agricultural exports, which as a group grew at a compound rate of 5.1 percent per year from 1956-58 to 1965. At the same time, annual growth rates of exports of selected commodities were: for oilseeds and oil, 10.7 percent; vegetables and preparations, 13 percent; feed grains, 13.4 percent; and meats, 15.5 percent.

Examples of Progress - State Experiment Stations

Arizona - An Economic Evaluation of the Impact of United States Agricultural Export Programs on Domestic Agriculture and Agricultural Related Industries.

Results of this research has resulted in some very significant conclusions.

The present method of balance-of-payments accounting which shows that P.L. 480 shipments have no effect on U.S. balance of payments are misleading. One of the serious problems in balance-of-payments accounting, which records agricultural-surplus sales of several billions of dollars, is that the arithmetic may conceal structural imbalances in the basic international-trade mechanism. The exportation of United States agricultural products and of certain services, such as transportation of these products, is closely intertwined with several dollar-flow or financing items. Further, much of the exportation of merchandise from the United States is made possible only by financing through grants or government loans. In short, much of the current account surplus in the United States balance-of-payments can be explained by our aid programs such as surplus disposal and Food for Peace.

North Central Region - Implications of the European Common Market for Midwestern Agriculture.

A preliminary spatial equilibrium model of international trade in major agricultural commodities for 1975 has been developed. While individual commodities would be considered, interaction among commodities and among countries would be emphasized to arrive at 1975 levels of prices, production, consumption, and trade flows for all major trading nations in the world. This model will be used to assess the economic consequences of changes in domestic production and price programs and foreign trade policies. These results should serve as one basis upon which judgment can be made concerning United States domestic and foreign trade policies.

Maryland - Organization of the World's Agricultural Resources.

The series of systematic surveys of the way agricultural resources are organized in various parts of the world is now well underway. Completed during this past year were five manuscripts and publications analyzing various systems of agricultural resource organization: in Uganda, (the Buganda); in the U.S.S.R., (the Kolhos); in Southern Rhodesia, (the Shona); in Zambia, (the Chewa); and in Iran, (feudal village irrigated agriculture). Field work and preliminary write-ups were completed for systems of agricultural resource organization in Jamaica (Plantation) and Egypt (Egyptian village).

Learning more about the institutions affecting the productivity of agriculture in various cultures of the world is a crucial step in attempts to make recommendations on how to change agricultural resource organization in such a way as to increase productivity.

AREA NO. 1

EFFECTS OF FOREIGN ECONOMIC DEVELOPMENT ON AGRICULTURE

Problem. Economic improvement of agricultural production and marketing is a major objective of development plans of low income countries. Generally, in these countries agriculture accounts for 60-80 percent of total employment and a third or more of national income. Research is needed to provide a more accurate measure of progress made in improving agricultural output and productivity under such plans and to provide a broader basis for gauging the effects of outside assistance, especially on production, consumption and trade in farm products. Many foreign countries are reappraising or revising their agrarian structures, an issue which is becoming increasingly important in most underdeveloped countries and in which the U.S. Government is taking an increasing interest. Research is needed to analyze systematically and continuously the problems inherent in the present system of land and water resource use, tenure and other agrarian institutions in these countries, and to bring out the probable effects of changes in the land system on economic growth, agricultural development, and trade in farm products.

Research also is needed to determine the extent and nature of world markets for agricultural exports from less-developed countries. Farm production, price, and marketing programs and policies of foreign countries have important impacts on foreign trade and market outlets for U.S. farm products. Comprehensive study of these programs and policies is needed to provide an informed basis for evaluating their effects on economic growth and development of agriculture as well as of the national economy of foreign countries and for expanding market prospects for U.S. farm products.

USDA AND COOPERATIVE PROGRAM

A. Factors Associated With Changes in Agricultural Output and Productivity.

In many countries, slow growth in the agricultural sector has retarded the rate of growth in the total economy. Because the agricultural sector accounts for a large part of total economic activity in the developing countries, it is important that growth in this sector occur at a high and sustained rate. This area of work is concerned with identifying and analyzing the processes by which developing countries made the transition from low to high levels of agricultural output and productivity. Intensive studies of agricultural development processes are being made in seven countries (Taiwan, Greece, India, Mexico, Nigeria, Brazil, and Colombia). In addition, comparative analyses are being carried out by Washington-based staff members.

Research is directed toward the following four objectives: (1) To describe and compare changes and differences in levels of agricultural output and input and to measure the productivity of important input factors in the agricultural sector of the seven study countries; (2) to identify the major inputs and

institutional conditions accounting for differences in levels and rates of change in output and productivity in the study countries and to determine the share that each of these contributed to increased output. The purpose here is to explain how agricultural output was increased including the effects of changes in the level and combination of inputs used; (3) to determine why changes occurred in the level and combination of inputs used to identify the forces that caused farmers to change their production processes and to determine the relative importance of these forces as change agents for the different conditions existing within the intensive study countries; and (4) to analyze the potentials for improved institutional arrangements and resource use so that development plans and programs can be designed to include those aspects that lead to increased agricultural output and productivity.

The analysis of factors affecting agricultural output and productivity in the seven study countries will be sufficiently comprehensive to permit the construction of general models that can serve as a basis for guiding countries in formulating programs and policies to speed up rates of increase in agricultural output and productivity.

This research project is conducted under the sponsorship of the Agency for International Development.

B. Role of Agriculture in Foreign Economic Development Programs. Although the importance of agriculture's contributions to national economic growth is generally recognized, adequate knowledge about the role of agriculture in stimulating national economic growth is lacking. More knowledge is needed about the growth process before national development programs can be improved. Research under this project includes the determination and measurement of agriculture's contribution to economic growth and the relationship of these contributions to the types of development programs needed in countries at different stages of economic growth. The results of these studies will help to establish priorities for development programs and help to evaluate the effects of economic development in less-developed countries on the demand for U.S. farm products, both current and potential.

C. Effects of Economic Development Upon Patterns of Foreign Trade. Income growth leads to rising demands for increased quantities and varieties of agricultural products. The volume and consumption of imported agricultural products will vary with the level of development of foreign countries and also will vary with the resource base and productive capacity of importing countries. It is necessary to measure the effect of development and the variability in development patterns to predict changes in trade patterns and the demand for U.S. exports. Research under this project is concerned primarily with the determination and measurement of income-trade changes so that the implications and problems of shifting patterns of foreign trade on American agriculture can be better estimated. Identification and improved measurement of the inter-relationships between development and trade is a continuing objective of these studies.

D. Demand for Agricultural Exports of Less-Developed Countries. National development plans and programs in less-developed countries are highly dependent upon foreign exchange earnings to pay for the necessary imports of capital and capital goods to finance their development plans. In most countries, agricultural exports account for the major share of total foreign exchange earnings. For this reason, research is needed to identify and measure the factors affecting the demand for the agricultural exports of less-developed countries as a basis for evaluating how this demand might change over the next decades. Knowledge of this nature can be used to evaluate the efficacy of national development plans and to establish capital investment priorities. To meet these needs, a project on the demand for the agricultural exports of less-developed countries is being conducted under the sponsorship of the Agency for International Development.

E. Research Grants Under P.L. 480. As of October 1, 1967, P. L. 480 research grants are supporting six studies: two in India, two in Israel, and two in Spain. In addition, 21 proposals for research studies originating in seven countries are under consideration.

To qualify for grants, proposed studies must have the potential of providing research findings of "direct value to U.S. agriculture." They must contribute to one or more of the following: (1) Improve research methodology and techniques useful in analyzing U.S. agricultural economic problems; (2) help solve U.S. agricultural economic problems; or (3) supplement regular ERS studies appraising the competitive position of U.S. farm products in foreign markets. Findings from grant studies that analyze important factors and developments affecting agricultural production, consumption and trade in specific countries are of basic importance to the ERS in discharging its functions.

Research Input. Total Federal scientific effort devoted to research in this area was 9.3 scientist man-years, divided as follows: 6.6 to Factors Associated with Changes in Agricultural Output and Productivity; 0.2 to Role of Agriculture in Foreign Economic Development Programs; 1.0 to Effects of Economic Development Upon Patterns of Foreign Trade; 1.0 to Demand for Agricultural Exports of Less-Developed Countries; and 0.5 to Research Grants under P.L. 480.

Program of State Experiment Stations. The States are showing increased interest in the effects of foreign agricultural development on agricultural trade of the United States. The research effort of the State stations in this area is about 2.0 man-years.

PROGRESS -- USDA AND COOPERATIVE PROGRAMS

A. Factors Associated with Changes in Agricultural Output and Productivity. Results from the seven study countries are still somewhat tentative because the work is at different stages of completion in each of the countries. Final reports are now being prepared for Taiwan and Greece, the two countries nearest completion, while work has been underway less than a year in Colombia. However,

preliminary results indicate the importance of having available improved technology. In Taiwan and Mexico, much of the improved technology was developed in these countries along with adaptations of improved technology from other countries, whereas in Greece primary emphasis was placed on adapting technology from the United States and Europe to fit Greek conditions. The experiences of Greece, Taiwan, and Mexico, indicate the importance and usefulness of proper price policy for both inputs and products in getting improved practices adopted. However, the studies also indicate that the appropriate form and method for developing and implementing effective policies and programs vary from country to country according to the unique cultural, political and economic conditions of the country.

Early work in India and Brazil indicate considerable variation in levels of output and productivity within various regions of each country. Considering the size and geographic variation within each country, this is not surprising. However, it does indicate the limitations of using aggregate country data. For example, some states in India, larger in both population and geographic size than many countries, had much higher rates of increase in agricultural output than countries often considered to have a more dynamic and successful agriculture than India. In Brazil the analysis indicates that changes in productivity levels based on national data may lead to incorrect conclusions when considerable quantities of new land are added that have different levels of output from the national average. Therefore, what may be attributed to changes in productivity may in reality be changes in the inherent levels of productivity of the land base.

A broad generalization of the development process in the three countries where the analysis is most advanced--Greece, Mexico, and Taiwan--could be stated as follows: All three countries recognized the need for developing improved agricultural technology to replace traditional methods of farming, and they set about to develop new plant varieties and improved cultural practices appropriate for their own situations. In addition, policy-makers were aware that, in most cases, the new technology would not be rapidly adopted unless special programs were instituted to encourage farmers to adopt it. This encouragement took different shapes and forms, both in the three countries and through time, but in all cases it consisted of economic incentives, improvements in supply conditions of the new inputs, and education of how to apply the new technology as well as the economic consequences of using it.

B. Role of Agriculture in Foreign Economic Development Programs. Little attention was given specifically to this activity because of limited research resources. Work in this area was to a large extent done in response to requests for assistance in evaluating and consulting on broad development programs for countries or regions.

C. Effect of Economic Development Upon Patterns of Foreign Trade. The foreign market for U.S. agricultural products is closely associated with economic growth of the importing countries and varies with the level of income. A recent study using time series data revealed that the marginal propensity to import agricultural products on a commercial basis declines as the level of income rises.

For countries with low levels of development, per capita imports increased 25 percent for each 10 percent increase in per capita income while in the middle income range the growth in imports kept pace with the income growth, and in the high income countries imports increased only 7.8 percent for each 10 percent income rise. The high and middle income countries are the major markets for commercial exports and can be expected to remain so in the future; however, the tremendous import response in relation to income growth demonstrated by the low income countries points out the potential import demand that will be forthcoming given sustained economic growth.

The composition of import demand changes with level of income and as development progresses, demand tends to shift from staples to animal products and other more income-elastic commodities. The trend is noted in regard to the composition of U.S. agricultural exports. From 1956-58 to 1965, all agricultural exports increased at a compound rate of 5.1 percent. During the same period annual growth rates of exports of selected commodities were: for oilseed and oils, 10.7 percent; vegetables and preparations, 13 percent; feed grains, 13.4 percent; and meats, 15.5 percent. Measurements of import responses of individual countries for imports from both the U.S. and the world are consistent with changes in U.S. export trends for particular commodity groups.

D. Demand for Agricultural Exports of Less-Developed Countries. Work on Phase A of this study, a historical analysis of agricultural exports of the less developed countries from 1951-1965, is almost completed. Trade data for 22 agricultural commodities, accounting for about 90 percent of the export earnings of less-developed countries, were compiled and tabulated in trade matrices to show the trade flows in these commodities between 20 subregions of the world. A manuscript describing the historical changes in the patterns of trade in these commodities is being prepared and will be submitted for publication early next year. The international trade data prepared under Phase A of the project are the most comprehensive data available. The development of trade matrices for the commodities being studied and the analysis of historical changes that have occurred among regions over time should be very useful to U.S. and foreign officials in formulating new trade and aid policies as well as in evaluating the effects of current policies and programs upon economic growth objectives.

Work was also initiated during the year on the overall methodology for analyzing the import demand for each commodity by the major importing countries in 1980. Work on the second phase of this study, a detailed analysis of the demand in importing countries for these selected agricultural commodities, will concentrate heavily upon the most recent consumption patterns as a basis for making predictions of how world demand will change by 1980. Two manuscripts investigating the factors affecting the demand for selected agricultural commodities were completed. One manuscript deals with the economic factors influencing Japan's future import demand for feed grains while the other analyzes the policies and market patterns affecting Japanese grain imports in the early 1960's. The results of these studies indicate that possible changes in Japan's domestic rice program toward free trade could be beneficial to the countries of Southeast Asia. Work on the trade flows and demand for these agricultural exports of less-developed countries is being carried out under a Participating Agency Service Agreement with AID.

E. Research Grants Under P.L. 480. Grants supported 14 studies in foreign countries during the year ending October 1, 1967. Eight of these projects were completed during the year as follows:

- (1) INDIA, The Study of Impact of Changing Conditions on Grain Marketing Institutions and the Structure of Grain Markets in the Punjab.

The existing marketing system in the Punjab was studied with particular attention being given to changes in the structure and operation of the grain market and the probable impact of institutional forces on this structure and operation. The market operations appear to be handicapped by poor storage facilities, zonal regulations, and a dearth of market information. The study concludes that market technology and improvements in market structure have not kept pace with the expansion in agricultural production in the Punjab.

- (2) ISRAEL, Evaluation of Long Term Programs for Agriculture With Respect to Requirements and Supply of Capital.

This project points out the basics of capital formation and financing in the Kibbutz type of farms in Israel. During the early stages of growth the rate of capital formation in the Kibbutz depended upon institutional financing. As the co-operatives structure of the Kibbutz developed the rate of capital formation came to depend upon the acceptance of the Kibbutz as a good risk in the capital market.

- (3) ISRAEL, Quantitative Analysis of Optimal Water Resource Development and Allocation.

The suitability of standard economic models to an analysis of the major aspects of the water resource problem is demonstrated by this paper. The empirical part of the study indicates that for the conditions in Israel the proposed sea-water desalination plant is uneconomical and that more information about the effect of the salinity parameter on crop yields is needed to determine the optimum combination of quantity and quality in irrigation water. From a methodological viewpoint, the study will be useful to researchers confronted with similar problems.

- (4) ISRAEL, Agricultural Statistics in Israel--Methods of Compilation.

In this study the relatively young agricultural statistics program of Israel is reviewed. Each of the 40-some statistical series is appraised objectively with respect to its strengths and weaknesses. The study will be useful to developing countries in providing guidelines for the collection and development of agricultural statistics.

- (5) FINLAND, The Influence of Planning and Management on Success in Farming.

This is a study to understand the relations of mental capacities, education and other similar factors to financial progress in farming and to the decision making process. The results, while somewhat inconclusive, reflect the types of reasoning used by farmers in planning. The study provides an insight into decision making and the management of a farm operation.

- (6) COLOMBIA, Economic Aspects for Corn and Milo In Colombia.

This study provides an understanding of factors considered in selecting public policies which direct the production and marketing of feed grains in Colombia. Three hypothetical programs--(1) normal tendencies, (2) intensive program, and (3) maximum potential--are analyzed to determine their effect on yields. The intensive program appears to be the most economically feasible one for Colombia. The results of this project should be useful to official policy makers and persons engaged in corn marketing and the feed industry.

Field work for two projects was completed but the final reports have not as yet been completed. These are:

- (7) FINLAND, A Study on the Economics of Alternative Use of Land for Agriculture or Forestry.
- (8) SPAIN, Food Consumption in Relation to Family Income in the Rural Population of Spain.

Six research projects underway as of October 1, 1967 are as follows:

- (9) SPAIN, Programming for Dryland Agriculture in the Duero Valley.
- (10) SPAIN, A Forecast of Agricultural Development in the Irrigated Areas of Spain.
- (11) INDIA, Evaluation of the Impact of Land Reforms in the Western Region of India on Structure of Land Holdings and Farm Production Potential.
- (12) INDIA, The Structure and Behavior of Farm Prices in India.
- (13) ISRAEL, Comprehensive Programming of Regional Economic Development.
- (14) ISRAEL, Comparative Analysis of Processes of Agricultural Development.

PUBLICATIONS -- USDA AND COOPERATIVE PROGRAMS

- (1) Christensen, Raymond P. World Population Growth and Food Requirements. Paper presented at Conference on North American Common Market, Iowa State University, Ames, Iowa, Oct. 2-4, 1967, 19 pp.
- (2) Gregory, Wade F. Agricultural Development in Greece, Mexico and Taiwan. Paper presented at CENTO Conference on Agricultural Development Policy, Istanbul, Turkey, Sept. 11-16, 1967, 25 pp.
- (3) Hertford, Reed. The Development of Mexican Agriculture: A Skeleton Specification. Paper presented at the annual meeting of the American Farm Economics Association, Guelph University, Ontario, Canada, Aug. 14-16, 1967, 20 pp.
- (4) Mackie, Arthur B. World Food Production Potentials. Paper presented at Conference on North American Common Market, Iowa State University, Ames, Iowa, Oct. 2-4, 1967, 22 pp.
- (5) Schaub, John R. and Mackie, Arthur B. U.S. Agricultural Exports and Foreign Economic Growth. Agricultural Economics Research, Vol. XIX, No. 2, April 1967. (Reprinted as ERS-For. 192, 9 pp.)

AREA NO. 2

EXPORT PROGRAMS AND MARKET DEVELOPMENT

Problem. Authorized levels of food aid under the Food for Freedom program are expected to continue at a high level despite the fact that surpluses in most commodities have been greatly reduced. In the future, however, new problems are anticipated in achieving more effective programming and more efficient distribution of food aid to meet the more specific objectives of helping the food deficit countries to increase their agricultural output. Improved market infrastructure as well as new methods and arrangements are needed to overcome handling and distribution obstacles to insure that food aid is used in the most effective manner to meet nutritional needs, famine and emergency situations and the economic food deficits where development is proceeding rapidly. As emphasis is placed on programs to increase food production in the food deficit countries, more care will be required in programming food aid to avoid disruption of commercial trade and interference with agricultural production plans in recipient countries.

With prospects for long range expansion of U.S. exports, it is urgent to continue the analysis and evaluation of the impact of Government export programs and their implications to agricultural production, consumption, trade, and development in the recipient countries as well as to U.S. agriculture. It is also important to study foreign marketing and distribution systems in the developing countries for the purpose of facilitating the utilization of U.S. imported commodities. Research on the economic implications of U.S. food assistance will be needed more to assess (1) how food aid can best contribute to economic development of recipient countries and assist in "self-help" programs, (2) the economics of food nutrient sources and prepared food products for improving nutritional levels, (3) the interrelationships of domestic agricultural programs and U.S. export programs, (4) the effect of agricultural commodity aid on the efficient use of agricultural resources and its relationship to farm incomes in both the United States and recipient countries, and (5) the relative cost and benefits of alternative government export programs.

USDA AND COOPERATIVE PROGRAM

A. The Impact of Food Aid in Recipient Countries and Its Role in Economic Development. Contract and staff studies on economic impacts of P.L. 480 programs have been completed for a number of countries. In addition to the country studies, basic information and analyses are developed relating to: (1) Effectiveness of food aid programs on the expansion of U.S. agricultural exports; (2) effects of P.L. 480 exports on farm prices, food production, consumption, and trade in recipient countries; and (3) the constructive use of agricultural commodities in foreign economic development. The relationship of food aid programs to overall foreign economic aid programs of the United

States is also assessed for the purpose of modifying such programs to increase their effectiveness. Countries are selected for in-depth studies to measure the impact of food aid imports.

B. Economic Appraisal of Food Nutrient Sources and Comparative Costs. With increased interest in the improvement of nutrition in future food aid programs, there is a need to analyze the relative cost of alternative products as a source of carbohydrates, fats, and proteins. Primary food nutrient sources of carbohydrates, fats, and proteins, and processed food products for use in foreign and domestic food distribution programs are identified for economic evaluation.

Cost estimates are developed for both primary and secondary sources of food nutrients, and information is compiled on availability, price trends, and factors affecting the production and costs of basic ingredients. Costs, specifications, and problems of processing, packaging, storage, transportation, and handling, as well as marketing obstacles and commercial market opportunities of selected commodities are analyzed. Secondary sources of data are used, but supplemented with primary data obtained from interviews with representatives of public and private laboratories and business firms having firsthand knowledge of development, marketing requirements, and costs of the products under study. The information obtained is appraised in relation to aggregate national food deficits of developing countries, as well as identified needs of low income groups within individual countries. The feasibility of alternative nutrient sources and products is assessed, and comparative efficiencies to meet particular needs of food aid recipients are analyzed.

C. Interrelationships of Domestic Farm Programs and U.S. Commercial Export and Food Aid Programs. Research in this area is concerned with (a) international pricing and production policies, including the analysis of selected U.S. commodity export policies, domestic price supports, and their relationship to consumer prices and price support levels in selected P.L. 480 recipient countries; and (b) the effects of national pricing and trade policies on the effective use of food aid imports and commercial trade among major food aid recipients. The reduction in stocks, together with the increases in foreign demand and the food needs of developing countries, suggests the need for re-appraising domestic farm programs, desirable levels of carryover stocks, and domestic and export pricing policies in relation to U.S. food aid commitments and policies. On a continuing basis, more study is needed to determine the impact of alternative domestic price support and production policies on domestic and foreign commercial markets and the impact of U.S. food aid plans on the use of agricultural productive capacity and farm incomes. Some appraisal is made of the economic relationships of U.S. domestic and export pricing policies to the national production and import pricing policies of food aid recipient countries as a basis for determining the significance of disparities between export and import prices and their impact upon achieving an efficient use of agricultural resources.

D. Changes in Marketing Structures Needed for More Effective Utilization of U.S. Imported Commodities. In order to achieve greater efficiency in food aid utilization and programming, there is urgent need to develop research guidelines and initiate research for the study and analysis of foreign marketing and distribution systems. Currently, research is being organized in this area. As a beginning, research in this area will be concerned with the analysis of: (1) The adequacy and efficiency of storage, refrigeration, transportation, port, and processing facilities; (2) capital requirements for progressive development of marketing structures; (3) development of grade and classification standards; (4) measurement of wastes and losses and means of reducing them; (5) market efficiencies, including analysis of marketing and distribution costs and margins; (6) political and administrative problems in improving food distribution systems; and (7) the rate at which marketing improvements may be instituted within the framework of existing systems and the stage and rate of economic growth.

Research Input. Total federally financed scientific effort devoted to research in this area during fiscal year 1967 was 1.5 scientist man-years, divided as follows: 0.4 to impact of food aid on recipient countries and its role in economic development, 0.4 to economic appraisal of food nutrient sources and comparative costs, 0.4 to interrelationships of domestic farm programs and U.S. commercial exports and food aid programs, and 0.3 to changes in marketing structures needed for more effective utilization of U.S. imported commodities.

Program of the State Experiment Stations. The research effort of the State stations in this area is about 3.0 scientist man-years.

PROGRESS -- USDA AND COOPERATIVE PROGRAMS

A. The Impact of Food Aid in Recipient Countries and Its Role in Economic Development. A study on "Assessment of the Economic Effects of the P.L. 480 Program in Spain" has been submitted by Sociedad de Estudios y Publicaciones, S.A. This study covers in considerable detail the impact of P.L. 480 imports on domestic production and marketing, the contribution of these imports to stabilization and improvement in Spain's financial condition, and the overall effects of agricultural commodity aid on Spain's economic development. The report is being reviewed in the Department preliminary to consideration for publishing in whole or in part.

A report, "Impact of U.S. Agricultural Commodity Assistance on Agricultural Production in Recipient Countries", summarizing the conclusion of contract research studies in six major food aid recipient countries has been approved for publication.

A report on "Recent Trends in P.L. 480 and Other U.S. and Global Economic Assistance Programs" was published in the August issue of Foreign Agricultural Trade of the United States. This report compares P.L. 480 with other economic assistance, discusses the food aid supplied by countries other than the United States, reviews the progress of the World Food Program and reports on capital and technical assistance to agriculture in the developing countries.

B. Economic Appraisal of Food Nutrient Sources and Comparative Costs.

Research has been activated on economics of food nutrient sources and prepared food products for foreign and domestic food distribution programs. This work is being conducted under a joint project with the Marketing Economics Division. Progress has been made in the identification of food products for intensive study and the assembly of relevant information available from secondary sources.

C. Interrelationships of Domestic Farm Programs and U.S. Commercial Export and Food Aid Programs. Important results derived from contract research and analyses made by the Economic Research Staff were reported in major papers presented during the year. These papers covered such topics as (1) world food production trends, (2) changing emphasis of food aid programs, (3) increasing volume of world grain exports, (4) U.S. grain exports by major port areas, (5) trade barriers and trade policy issues, and (6) short and long term export prospects.

D. Changes in Marketing Structures Needed for More Effective Utilization of U.S. Imported Commodities. Extensive discussions have been held on the desirability of initiating research on the marketing of wheat in India. A project statement has been prepared on marketing margins, costs, and losses of imported and indigenous wheat in Uttar Pradesh, India. Emphasis in this research is to assess and measure losses of grains prior to and after harvesting. Discussions are underway with FAS to determine if such research is eligible for financing with market development research funds.

PUBLICATIONS -- USDA AND COOPERATIVE PROGRAMS

- (1) Barlow, Frank D. Jr. Export Possibilities for Agricultural Commodities. Paper presented at the 1967 Conference of Collaborators from Southern Agricultural Experiment Stations, SURDD, New Orleans, La., March 1967, 32 pp.
- (2) _____. Export Potentials for Mid-West Grains. Paper presented at the Foreign Trade and Grain Marketing Conference, Edwardsville, Ill., July 1967, 31 pp.
- (3) _____ and Libbin, Susan A. Recent Trends in Public Law 480 and Other U.S. and Global Economic Assistance Programs. ERS-For. 203, Sept. 1967, 32 pp.
- (4) Christensen, Raymond P. United State's Role In Alleviating World Hunger. Paper presented at the Arkansas Plant Food Conference, Hot Springs, Ark., Dec. 1966, 11 pp.

AREA NO. 3

INTERNATIONAL MONETARY AND TRADE RESEARCH

Problem. Agricultural exports have an important influence on the U.S. balance of payments situation. While the major role is played by exports for dollars, concessional sales also have an impact. Continuation of P.L. 480 programs and development activities by many U.S. and international agencies make it necessary to analyze the monetary and financial aspects of these programs from the viewpoints of the effects both on the recipient countries and on United States agricultural exports. Constant reviews and analyses are needed of these aspects based on available economic data obtained from sources such as reports of U.S. Foreign Service and the international financial institutions. These analyses are essential to develop an appropriate Department position and to support it in inter-agency discussions leading to the adoption of policies and programs carried out by the United States Government.

Development of regional trade groups, often with the longer-term objectives of achieving economic integration, is continuing or being considered in many areas of the world. Integration in Europe advanced further with the fusion of executive commissions of the European Economic Community (EEC), the European Coal and Steel Community (ECSC) and Euratom. Unified prices for many agricultural commodities came into force in 1967 with others scheduled to become effective by mid-1968. The United Kingdom and several other members of the European Free Trade Association (EFTA) have again submitted applications for membership in the EEC. Latin American integration received further stimulus in 1967 from a declaration by the American Presidents to create progressively, beginning in 1970, the Latin American Common Market, which shall be substantially in operation within 15 years. The objective is to bring together the Latin American Free Trade Area and the Central American Common Market as well as other Latin American countries not yet affiliated with these systems.

The process of regionalization may alter the pattern of indigenous agricultural production and trade among members of the region leading to changes in supply as well as demand for agricultural products. Regionalization often involves changes in GATT obligations and therefore has important implications for access of U.S. farm products to foreign markets.

One of the major considerations in assessing the future expansion of U.S. agricultural exports is the potential increase in requirements for agricultural products in developed countries. The realization of this trade potential is greatly affected by the influence of governmental policies of these countries on their domestic production. Information is especially needed regarding (1) the characteristics of world trade and the relationships affecting demand and supply of agricultural products such as feed grains and oilseeds, (2) the trading and pricing policies followed in international markets, and (3) the techniques employed in protecting prices and incomes of domestic producers from the effects of world market prices.

Information on how government policies affect trade is important for appraisal of world import demands and supplies of agricultural products. It is becoming increasingly apparent that further significant trade liberalization for agricultural products can be achieved only by dealing with domestic agricultural policies as well as the more traditional aspects of trade policy. Agricultural price and income support policy and trade policy are inseparable. Analysis is needed of various techniques of providing income support for domestic producers to assess their impact on the opportunities for efficient producers in other countries to compete with these domestic producers.

USDA AND COOPERATIVE PROGRAM

A. Analyses of External Financial Conditions in Public Law 480 Recipient Countries. Economic and financial analyses are required for each P.L. 480 recipient country in order to determine the rate and method of repayment. These analyses include: (1) the balance of payments position of the country with special emphasis on the merchandise trade account; (2) external debt capacity in relation to export capacity; (3) the ability to import commercially in relation to foreign exchange and gold reserves; (4) internal economic conditions and outlook for growth, income, investment, money and finance. The analyses also include recommendations as to the most appropriate type of program at a given time, taking into account not only the recipient country's economic position but the current U.S. balance of payments position, and the legal requirements under which the P.L. 480 program operates.

In addition to Public Law 480 programs, similar analyses are prepared for countries eligible for CCC export credits. These studies contain the same information mentioned above, but relate to the ability of the recipient country to repay short-term debt.

B. Public Law 480 and Other USDA Export Programs as They Affect the U.S. Balance of Payments. The U.S. balance of payments problem calls for a continuing scrutiny of various U.S. Government programs, including those of this Department, in order to ascertain the nature as well as the extent of their impact on the balance of payments. Agricultural export programs are many and varied. Not only is this so, but the initial impact upon the balance of payments of exports under each program may be quite different from the ultimate impact. A further problem is to determine the handling of the government assisted export programs in balance of payments statements. This involves determining how agricultural exports under various programs are recorded in the widely used subsidiary balance of payments table "Major U.S. Government Transactions" which sets out U.S. Government grants and capital outflows to abroad by program. Using basic national accounting techniques, the recording of an export under a given program can be traced through the balance of international payments statement over time to derive the cumulative affect. The Balance of Payments Division of the Office of Business Economics at the Department of Commerce is basically responsible for making

the classification determinations. They also supply information which is not available within this Department on the ultimate returns to the U.S. on noncommercial exports made under certain USDA programs.

C. Agricultural Development Banks and Credit Programs. Capital assistance has been playing a major role in meeting the external financial needs of developing economies, and for the most part it has been made available to the public sector for infrastructure investment, for transportation and sanitation, for rural improvement, for low-cost housing, and to augment foreign exchange resources. Development banks and institutions, on an international, regional and national level, have played an increasing part in U.S. economic assistance efforts, especially in the agricultural sector of these economies.

The underlying reasons for the establishment of these banks and credit institutions are the needs of many countries for outside capital to promote development and the inadequacy of international flows of private capital to meet them. There is a growing awareness that expanded credit availabilities are urgently needed, not only in the public sector but particularly in the private sector. The amount of aid going directly to private undertakings has been relatively small, but reflecting a change of emphasis in the activities of international organizations, it has tended to increase during the past 3 or 4 years. The medium usually selected for channeling official loans to the private sector is the indigenous credit institution which specializes in lending for the development of agriculture, industry, housing, etc. In order to appraise international and national agricultural assistance efforts, more needs to be known about agricultural credit institutions and policies in the recipient countries.

D. Regionalization and U.S. Trade. The formation and strengthening of associations of nations around the world could substantially affect world trade in agricultural products and significantly influence U.S. agricultural exports. Studies in this area involve analyses of the relationships between production, utilization, and trade of agricultural commodities and changing agricultural policies and prices, and marketing arrangements that result from the process of regionalization. The impacts of policy and price changes on the feed-livestock economies of the member countries of the EEC and EFTA are of particular significance to the trade interests of the U.S.

E. Trade Policies and Demand Relationships. In both developed and developing countries, government income support and trade policies substantially influence supplies, demands, and prices for products in world markets. National policies which may be primarily oriented toward support of domestic production frequently have trade implications. These need to be evaluated along with specific trade policies in any appraisal of potential commodity demand and supply. This information is also of importance in analyzing potential effects of international commodity agreements.

An area of particular importance to the United States is the world demand for products of the feed-livestock sector. U.S. exports of feed grains,

oilseed and oilmeal have greatly expanded in recent years. The demand for these is associated with developments in livestock production and in indigenous livestock feed production in importing countries. Studies of the relationships involved in the production conditions and consumption potential for the interrelated products, taking account of the influence of support and trade policies, are receiving increasing attention. Developments associated with products of the feed-livestock sectors in developing countries are also of interest. Rising incomes lead to demands for higher quality diets which in turn, result in increased consumption of animal products. Ability to purchase needed products on the world markets or to produce them indigenously to meet increased domestic needs and possible export potentials may have a significant impact on country development as well as on the outlook for U.S. exports of grains and other feedstuffs.

F. Special Economic Analyses. Studies on financial and monetary aspects of agricultural programs on an international level are used in the determination of the Department's positions and policies. These studies analyze financial and monetary factors which affect U.S. and world agricultural trade, and evaluate U.S. and international lending agencies' economic and agricultural assistance programs in developing nations. Special attention is given to foreign financial activities such as changes in monetary policies of individual nations, agricultural export promotion programs, and the financial aspects of the main common markets of the world: EEC, LAFTA, and CACM.

Research Input. Total federal scientific effort devoted to research in the monetary and trade research areas was 8.6 scientist man-years, divided as follows: 2.0 to financial conditions of P.L. 480 recipient countries and effects of P.L. 480 and other export programs on balance of payments, 0.2 to development banks and credit programs, 2.7 to regionalization and U.S. trade, 2.4 to trade policies and demand relationships, and 1.3 to special economic analyses.

Programs of State Experiment Stations. The research effort of the State stations in this area totals 5.1 man-years.

PROGRESS _ USDA AND COOPERATIVE PROGRAM

A. Analyses of External Financial Conditions in Public Law 480 Recipient Countries. With the recent changes in Public Law 480 legislation, countries which are recipients of U.S. surplus agricultural commodities may be required to repay in one or a combination of three ways--in dollars over a maximum period of 20 years, in local currencies convertible into dollars or other hard currencies over a maximum period of 40 years, or in local currencies upon receipt of the commodities.

Analyses are made continuously to provide a basis for detailed recommendations with regard to the method and currency of repayment under P.L. 480. Special analyses are made to determine the implications of alternative

programs. These analyses are based on current statistical data and information regarding balance of payments, trade, import arrangements, the status of U.S. held local currency balances and utilization of such currencies in developing countries. If the sale is made on the basis of dollar or local currency convertible credit, an analysis of the most appropriate credit terms and repayment schedule commensurate with the country's debt position provides the basis for specific recommendations. In the conduct of these investigations, general policy recommendations with respect to the conduct of programs are developed for use in interagency meetings. Other recurring reports on this subject include the financial status of developing countries, based on a mathematical rating scale, and a report on exchange rates in all countries of the world.

B. Public Law 480 and Other USDA Export Programs as They Affect the U.S. Balance of Payments. After consultations with various agencies, data on total U.S. trade and trade in agricultural products were collected and arranged to show the size of the immediate balance of payments effects and, for agricultural trade only, the ultimate effect. Essentially this means initially excluding exports financed by U.S. Government grants or credits to abroad but adding back any benefit at the time it occurs, such as repayment of a credit. The study revealed that in 1966 total U.S. exports amounted to \$29.2 billion, of which \$3.1 billion were financed by U.S. Government grants and credits to abroad. Total agricultural exports amounted to \$6.9 billion, or 24 percent of total exports, while agricultural exports not financed by U.S. grants and credits to abroad (commercial) accounted for \$5.5 billion, or 21 percent of total unassisted exports. Defining exports financed by U.S. grants or credits to abroad as noncommercial, then the commercial nonagricultural trade balance in 1966 was -\$393 million and the commercial agricultural trade balance was \$988 million.

In addition, during 1966, a return of \$168 million was realized on non-commercial agricultural exports. When this amount is added to commercial agricultural exports, total agricultural dollar earnings amounted to \$5,648 million in 1966. Deducting agricultural imports results in a net contribution to the balance of payments by agricultural merchandise trade of \$1,156 million. This may be compared with a net negative contribution of \$274 million in 1960.

C. Agricultural Development Banks and Credit Programs. The activities of agricultural credit institutions and development banks have received increasing attention. This has included, as official representative for the Department at interdepartmental discussions, participation in reviewing the growing number of international financial commitments being made through agricultural credit institutions in developing areas. More emphasis is being placed on the changing attitude toward official loans from bilateral to regional assistance, in particular through regional development institutions.

The problems affecting agriculture in the underdeveloped areas of the world are not confined to state or national boundaries. They are regional in

nature, and should be so treated by the lending nations, especially when a number of countries are trying to help themselves by creating regional development units. The prime examples of these institutions are the Asian, African and Inter-American Development Banks and the Central American Bank for Economic Integration. Although the African and Asian banks are not yet fully active, arrangements are well advanced. These development institutions are receiving increasing attention as potential means for channeling official and private development assistance. Agricultural credit facilities in Central America are being studied to determine if they might be the local institutions through which assistance can be channeled to the end user in that particular area.

D. Regionalization and U.S. Trade. Feed grain consumption by livestock in the European Economic Community, the most important commercial market for U.S. feed grain exports, was analyzed in a report which presents analytical framework for estimating feed grain demand in the EEC. This was used as the basis for projecting feed grain consumption in 1970 and 1975. Demand for feed grains is analyzed in four stages: (1) feeding rates, (2) consumption of livestock products, (3) livestock production, and (4) grain consumed as feed. Feed utilization rates, expressing the number of kilograms of grain used to obtain a kilogram of livestock product were estimated for the EEC and projected to 1975. Feed grain consumption more than doubled between 1951 and 1965 in reaching 38.68 million metric tons and is expected to attain 48.6 and 58.4 million tons in 1970 and 1975, subject to three broad conditions: (1) that the consumption of meat, 10 million tons in 1961-63, continues to expand as projected here and reaches 13.7 and 16.6 million tons by 1970 and 1975, respectively; (2) that the EEC maintains the degree of self-sufficiency in the basic categories of meat experienced from 1962 to 1964 and becomes self-sufficient in poultry and eggs; and (3) that the changes projected in feed utilization rates are realized.

Alternative hypotheses as to conditions of livestock projection, given the projected level of demand for meat, lead to estimated feed grain consumption ranging from 46.1 to 51.0 million tons in 1970 and from 53.9 to 62.8 million tons in 1975. Implications of these projections for EEC feed grain imports, and consequently, on U.S. exports, are important but depend in turn on two problems which are beyond the scope of the study: (1) the projected EEC grain production and (2) the effects of future EEC policy on the utilization of surplus French wheat for animal feeding.

Changes in EEC trade flows for commodities closely related to the feed-livestock economy of the European Community are being analyzed for the purpose of evaluating changes occurring since the introduction of the Common Agricultural Policy (CAP). Data on EEC imports of selected commodities for 1952-1966 have been compiled and arranged to examine changes in the absolute volume and market share for intra-Community trade, imports from the United States and from other countries. Thus, information is provided on how exports from the U.S. and other non-EEC countries have fared since the CAP came into force both with respect to absolute volume and share of the import market. Trend lines have been calculated for the 10 years preceding

the CAP in order to compare post-CAP trade developments with the trend in earlier years in addition to comparisons with some base year or base period average. An analysis is presently being prepared for publication.

Data have been collected and analysis is in progress of the probable change in food costs in the European Community associated with changes in producer prices of products in the feed-livestock economy. Estimates of food cost changes will be useful in appraising potential effects of changes in producer prices on the quantity of agricultural commodities demanded in the EEC, which in turn is of particular importance to U.S. agricultural exports.

Work has progressed on studying Latin American integration. An analysis has been completed of the possibilities of economic integration of the fertilizer sector in Latin America. Attention was given to the possibilities for sectoral integration because many proponents of Latin American integration believe that the most promising approach to economic integration is to proceed by individual product sectors. The fertilizer sector was selected because of its relationship to needed agricultural development and the current circumstance with respect to stage of development of the industry and the availability of raw material for increased production. The study concludes that many of the pre-conditions exist for progress in integration of the fertilizer sector but that infrastructure improvement must be made concurrently and obstacles are arising in the form of efforts to develop the industry on a national scale. The report is being edited for publication.

A summary report of a contract study on the import demand for oilseed and oilseed products in the European Community was published in November 1966. Projections for 1970 are that oilmeal consumption in the Community will be 55 to 70 percent greater than in 1962-63. About 55 percent of the projected level of oilmeal consumption of 8.2 to 8.8 million metric tons is expected to be soybean meal compared with the 1962-63 percentage of 40 percent. Net import requirements are projected to increase from 5 million metric tons in 1962 and 1963 to about 8 million metric tons in 1970. This study was financed by P.L. 480 market development funds. A more detailed report should be available soon for distribution.

Drafts of the final reports of a P.L. 480 financed contract study of the feed-livestock economy of the EEC have been submitted and review by USDA personnel is nearing completion. There are individual reports analyzing potentials for production adjustments in Germany, France, Italy and the Benelux countries, a report on estimated changes in producer prices and in marketing and transportation in the EEC, and an overall report on probable production and consumption changes in the EEC as a whole. According to the draft reports, farm output is expected to continue to rise substantially in the years ahead. It does not appear likely that shifts in grain prices will bring forth substantially larger grain plantings in the EEC. The profitability of cattle will encourage the continuation of large acreages in permanent pasture and annual forage. However, a substantial shift from wheat to feed grains seems likely, together with a shift from oats to barley and corn within the feed grains. Livestock numbers are expected to

continue to increase. Substantial increases in milk, beef, pork and poultry production are projected even though declining poultry and pork prices appear likely. Beef and veal production will probably continue to be tied to milk production although slow growth of specialized beef feeding may occur. The dominant factor in the change in EEC agriculture until 1975 appears to be farm restructuring and technical change. These are likely to be so significant that they will overwhelm the changes in price policy that are occurring. The reports conclude that prospects are dim for third countries to export soft wheat, poultry, pork and dairy products to the EEC. In fact, the Community is likely to be a competitor of other suppliers in the world markets. Prospects are favorable for the EEC to continue to be a major importer of feed grains and beef. The annual net grain deficit is projected to be on the order of 11 million metric tons during the 1970-1975 period.

Work was initiated under a contract for a study of the effects of changing trade systems in the Latin American countries on U.S. agricultural exports. Periodic progress reports will be submitted by the contractor with the study scheduled to be completed in 1969.

E. Trade Policies and Demand Relationships. During the past year, comprehensive data on trade in feed grains have been compiled and a study launched of the world meat economy for use in an intensive study of world demands for feed grains. A study conducted jointly with the Foreign Regional Analysis Division and the Foreign Agricultural Service on agricultural protectionism by non-tariff trade barriers in major developed countries is nearing completion.

An econometric investigation has been made of factors influencing Japan's future import demand for feed grains. A dynamic model has been constructed which attempts to explain demand, supply and price response in the Japanese livestock sector. The categories included are (1) beef and veal, (2) pork, (3) chicken, (4) eggs, and (5) milk and dairy products. Fish is included as the primary substitute commodity. The second phase of the investigation is concerned with the demand for and supply of feed grains. The feed grain model consists of relationships which attempt to explain total feed consumption, production, and imports. Although actual forecasts to 1980 have not yet been made, it is evident that demand for, and domestic production of, livestock products in Japan will grow substantially over the next decade, and that nearly all of the coarse grains used as feed will be imported.

To analyze the present flow of imported grain to Japan, or to project its future dimensions, it is necessary to examine the policies of the Japanese Government and the structure of its grain markets. An examination of the policy implications suggested by increased import demand by Japan has been completed, and the first draft of a manuscript entitled "Policies and Market Patterns Affecting Japanese Grain Imports" has been prepared.

This manuscript discusses grain price decisions of the Japanese Government and some of the foreign trade policies affecting grain imports. The Japanese

economy contains great growth potential, but there are also some clouds on the horizon. Both consumer incomes and economic growth are heavily dependent on Japan's world trade and exports. Many kinds of problems could bring on a recession or a slow-down. In addition, there are problems within the agricultural sector. Since much of Japan's agricultural production is now achieved at very high cost, the cost structure could act as a brake on industrial growth, exports and incomes. With slower general growth, the upgrading of diets by consuming more animal products might also be slowed. As a result, feed-grain demand for livestock production might not continue to increase as rapidly as expected. Yet, even if the cost problems were solved, and agriculture rationalized, Japan might turn increasingly toward Southeast Asia for both rice and feed grains. The United States should not become over confident.

F. Special Economic Analyses. Special studies on financial and monetary aspects of international and foreign agricultural programs were developed to assist in determining U.S. agricultural policy. The Branch's duties have continued to increase with respect to U.S. economic assistance programs and those of international lending agencies. This has required increased participation in policy recommendations on agricultural matters of the National Advisory Council and in the Development Loan Staff Committee. Additional studies were required because of the financial crises in the United Kingdom and in developing nations. Increased attention has been given to the financial aspects of common markets in the world, such as the EEC and LAFTA, with special attention to U.S. agricultural interest in the Central American Common Market.

PUBLICATIONS -- USDA AND COOPERATIVE PROGRAMS

A. Analyses of External Financial Position of Public Law 480 Recipient Countries

(1) Rice, G. P., "P.L. 480 Legislation and Multiple Currency Practices." Foreign Gold and Exchange Reserves. May 1967, 8 pp.

B. Public Law 480 and Other USDA Export Programs as They Affect the U.S. Balance of Payments

(2) Kruer, G. R., "Agriculture's Contribution to the U.S. Balance of Payments." Foreign Gold and Exchange Reserves. May 1967, 6 pp.

D. Regionalization and U.S. Trade

(3) Elz, Dieter, "European Economic Community Import Demand for Oil-seed Products--A Summary." ERS-Foreign 170, November 1966, 22 pp.

(4) Regier, D. W., "Growth in Demand for Feed Grains in the EEC." ERS-Foreign 158, July 1967, 39 pp.

F. Special Economic Analyses

(5) Kruer, G. R., "Economic Situation in the Major U.S. Agricultural Export Markets." Foreign Agricultural Trade of the United States. January 1967, 11 pp.

(6) _____. "Reserves, Balance of Payments Developments, and Economic Growth." Foreign Gold and Exchange Reserves. November 1966, 14 pp.

(7) _____. "Reserves, Balance of Payments Developments, and Economic Growth." Foreign Gold and Exchange Reserves. May 1967, 10 pp.

(8) Spears, M. H., "INTERNATIONAL MONETARY FUND: U. S. Drawings, 1964-September 1966." Foreign Gold and Exchange Reserves, November 1966, 8 pp.

AREA NO. 4

TRADE STATISTICS AND ANALYSIS

Problem. U.S. agricultural exports totaled a record \$6.8 billion in fiscal year 1967, compared with \$6.7 billion in the previous year. The 1966/67 total was 24 percent above the 1961-65 average and 77 percent above the 1955-59 average. The increase was due to larger commercial exports, which rose to \$5.2 billion and accounted for 76 percent of the total in 1966/67, compared with 71 percent in 1959-60. Agricultural exports during fiscal year 1967 were \$2.3 billion larger than agricultural imports, a new record high. Imports were about the same in value as in the preceding year but the composition showed a significant shift toward supplementary products. During the last year, the foreign market was an outlet for production of one out of every four harvested acres in the United States. It is important to the United States that U.S. agricultural exports maintain an upward trend. Continuing studies are needed to determine the policies and actions needed to assure continuous growth in these exports and whether the United States is sharing adequately in the growing world markets.

In mid-1967, uniform price structures for grains, pork, eggs, and poultry became a reality in the European Economic Community (EEC), except for a few remaining transitional features. Proposals to increase feed grain prices throughout the EEC in 1968 are now under consideration. The application of the United Kingdom and other countries of the European Free Trade Association for EEC membership may ultimately lead to import-discouraging higher grain prices in all these countries. Strong pressures of plentiful Argentine grain supplies in European markets led to unusual price relationships during the past year, particularly between Argentine and U.S. corn. A plentiful current grain harvest in central and northern Europe and the first postwar economic recession in Germany (Federal Republic) raise questions about the outlook for U.S. grain exports. Unification of other EEC commodity markets is to be accomplished in 1968. These developments must be continually followed, analyzed, and information about them made available to those concerned with the maintenance and expansion of U.S. agricultural exports.

A continuing analysis of U.S. agricultural trade, including Food for Peace shipments, is needed to detect trends and problems and determine the relevant economic and other factors that affect this trade. This information is used to provide agricultural producers, trade groups, and Government officials with a flow of statistics and interpretative reports on the status of and outlook for U.S. agricultural exports and imports. These reports are used in the formulation of policies, positions, and programs in the areas of foreign marketing of U.S. farm products and of competition, both at home and abroad, from foreign farm products. Some examples are the expansion of commercial markets for the nation's agricultural abundance, adjustment of price support programs and production controls to domestic and foreign demand, import fees and quotas to restrict imports detrimental to U.S. agriculture, trade

agreement concessions to open markets for agricultural products, the U.S. Food for Peace Program to share the nation's bounty with friendly people abroad, and export payments where needed to help U.S. farm products compete in world markets. More timely, precise and complete statistical data can improve the scope and depth of interpretations used in arriving at decisions on these and other major trade problems facing U.S. agriculture.

USDA AND COOPERATIVE PROGRAM

A. U.S. Agricultural Trade Statistics. This program involves the assembly, tabulation, and summarization of U.S. agricultural export and import statistics, as well as interpretations of agricultural trade by commodity, by country, commodity-by-country, and country-by-commodity. The basic data for the program are obtained from shippers' export and import declarations by the Bureau of the Census and purchased from that Agency in the form of electronic computer runs.

B. U.S. Agricultural Trade Situation. Estimates of U.S. agricultural exports and imports for current and future periods are developed. These are based upon agricultural trade statistics and upon their projections through regular consultation and cooperation with various subject-matter specialists in commodity, regional, and program operations, and daily research in news and other informational media. They serve as the backbone for a continuing analysis of U.S. agricultural trade. Export estimates are undertaken monthly and annually; import estimates, annually; and Food for Peace estimates, quarterly and annually.

The monthly estimates are reported as quantity and value of U.S. agricultural exports by principal commodities and major commodity groups. Connected with these estimates is the analysis of factors and developments accounting for changes compared with previous periods. In addition, an evaluation of the quantity and the value of agricultural imports competitive (supplementary) and noncompetitive (complementary) with U.S. production is undertaken.

Annual appraisals of U.S. agricultural trade (calendar and fiscal year) include Food for Peace shipments and total U.S. agricultural exports. Studies are made of the magnitude and trend of commercial exports for dollars. The continuing program includes the determination and appraisal of the value of foreign trade; quantity indexes of foreign agricultural trade; value of trade for selected commodities and groups; value of trade by countries of destination; and quantity and value of trade with specified countries in principal agricultural products.

C. World Agricultural Trade Statistics and Analysis. In response to the need for information on agricultural trade of other countries, a statistical program has been established and is being expanded. This program, like that for U.S. foreign agricultural trade, provides quarterly and annual data on agricultural exports and imports of the major trading countries. Basic data are purchased from the Organization for Economic Cooperation and Development (OECD)

in Paris and from the United Nations Statistical Center in New York in the forms of magnetic tapes and electronic computer output runs. Summaries of exports and imports, commodity-by-country and country-by-commodity, are being prepared for publication and serve in interpretation of the current situation of and the outlook for U.S. agricultural trade and its competitive position in world markets.

Separate studies have and will be made on agricultural trade with certain trade blocs such as the European Economic Community, the European Free Trade Association, the Latin American Free Trade Association, and the Central American Common Market to show the relative position of U.S. trade as economic integration proceeds.

D. Exports Under Food for Peace (Government-financed) Programs. A quarterly review of U.S. agricultural Food for Peace shipments by commodity is made. It includes an evaluation of the principal developments affecting such exports, as well as commercial sales for dollars. An annual evaluation is made on fiscal year basis of the extent of assistance to U.S. agricultural exports by means of export payments in cash or in kind or by sales for export of agricultural commodities from Government-owned stocks at less-than-domestic market prices. This analysis distinguishes between (1) commercial sales for dollars and exports under Government-financed programs which receive export assistance, and (2) dollar sales and program shipments which do not receive this form of assistance. The total value of such payments is also determined. The annual appraisal is made of U.S. agricultural trade by country for fiscal and calendar years. These reports distinguish Food for Peace exports by six specified programs, commercial sales for dollars, and total U.S. agricultural exports. Special studies are made on the magnitude and trend of program and commercial exports to provide information for developing new policies, programs, the establishment of attache posts, and export promotion activities for dollar sales.

E. Analysis of World Agricultural Prices. This program involves the compilation and analysis of international prices of agricultural commodities important to U.S. import and export trade to determine the relationships among these prices and the "terms of trade" of principal U.S. agricultural products. Prices for major commodities, accounting for most of U.S. agricultural trade, are tabulated, using all available sources, such as the Food and Agricultural Organization, the European Economic Community, the Organization for Economic Cooperation and Development, as well as official trade data from individual countries. These price series are used to prepare analytical reviews of price trends in principal world markets.

Particular emphasis has been placed on prices and variable import levies in the European Economic Community because of its importance as the destination of U.S. agricultural exports and because of the present transition period from distinct national price levels to a harmonized Community-price level and the problems attendant such transition.

Price index numbers which summarize U.S. agricultural exports and imports are prepared and published on a quarterly and annual basis.

At the request of the Food and Agriculture Organization, U.S. agricultural export prices are being reported to that agency.

F. Estimation of Costs and Benefits of Agricultural Protectionism. A 2-year grant with a 2-year extension for economic research to be conducted by the University of Minnesota was made in 1964. This research is designed to (1) evaluate alternative techniques for measuring the influence of national agricultural and trade policies on the direction and volume of trade in temperate zone agricultural commodities, (2) assess the costs and benefits of agricultural protectionism on a selected commodity and country basis in the North Atlantic Community, and (3) develop and evaluate several alternative forms of international commodity arrangements aimed at reducing conflicts between domestic agricultural price and foreign trade in products of the grain-livestock economy.

G. Other. The United States and many other countries are large producers and exporters of agricultural products such as cotton, hides and skins, and tallow. These products are facing increasing competition from synthetic substitutes for market outlets, which affects adversely certain segments of the agricultural economy of the United States. To provide a continuing analysis of the current status and outlook for world trade in those agricultural raw products that are faced with increased competition from synthetic substitutes, an appraisal by commodities and countries was designed to detect trade trends and problems of these agricultural products. In addition, an evaluation of the production and trade of synthetics and the impact that the synthetics may have on the agricultural industries of the United States and of individual countries would be considered. This project was approved in late 1966. The initiator and leader of this project transferred from ERS in 1967 and has not been replaced. For this reason, no progress was made on this project during the reporting period.

Research Input. Total federally financed scientific effort devoted to research in this area during fiscal year 1967 was 9.0 scientist man-years, divided as follows: 3.9 to U.S. trade statistics and analysis, 2.7 to world trade statistics and analysis, 1.2 to Food for Peace Programs, 0.5 to world agricultural prices, 0.3 to estimates of costs and benefits of agricultural protectionism, and 0.4 to the foreign economic aspects of the farm labor problem.

Program of State Experiment Stations. The research effort of the State stations in this area is about 1.0 scientist man-year.

PROGRESS -- USDA AND COOPERATIVE PROGRAMS

A. U.S. Agricultural Trade Statistics

Agricultural Exports at Record Level of \$6.8 Billion in Fiscal Year 1967. At \$6,766 million, U.S. agricultural exports during fiscal year 1967 were up slightly from the past record of \$6,677 million during the preceding year. Sharp increases in exports of cotton and tobacco, supported by smaller gains in oilseeds and products, vegetables and preparations were sufficient to more than offset the declines in animals and animal products, fruits, feed grains, and wheat. Exports of feed grains fell by 14 percent in fiscal year 1967. Developments that resulted in lower U.S. exports of feed grains included the higher prices for U.S. grains, the improvement in the feed grain supplies in European countries, increased competition from Argentina, South Africa, France, Yugoslavia, Brazil, and Mexico. Several factors tended to stimulate U.S. tobacco exports during the year. United Nations sanctions against tobacco from Rhodesia--usually one of the principal contributors to the tobacco export market--limited the supplies available to European markets. In addition, the high quality of the flue-cured varieties increased the demand for U.S. tobacco in the major importing markets. Furthermore, exports under Government programs were higher. Cotton exports rebounded sharply in fiscal year 1967. U.S. exports were more competitive in the world market with changes in the U.S. cotton price program. Demand for cotton was strong in foreign countries, reflecting the need to replenish low stocks.

U.S. Agricultural Imports Totaled \$4.5 Billion in Fiscal Year 1967. U.S. agricultural imports for consumption totaled \$4,454 million in fiscal year 1966/67--the same as the previous year. However, the import performance in 1966/67 was dominated by a sharp rise (8 percent) in supplementary (partially competitive) products, while complementary (noncompetitive) products were down 10 percent. The increase in supplementary products to \$2,667 million was brought about by larger imports of beef, veal, dairy products, sugar, vegetables, and fruits. In the animal and animal products category, the increase in meats and products and dairy products were about offset by declines in apparel wool, hides and skins, and dutiable cattle. The 10-percent decline in imports of complementary products was due mostly to a 17-percent drop in imports of coffee. The volume of coffee imports totaled 2,800 million pounds in 1966/67, down 11 percent in quantity from the previous year. In addition, the average unit value of imports fell to 35 cents a pound from 37 cents a year earlier. Other declines were noted for imports of crude natural rubber, hard fibers, silk, and carpet wool. Gains were recorded for bananas and cocoa beans. The volume of cocoa beans was down sharply, but value increased because of higher prices due to smaller world production.

B. U.S. Agricultural Trade Situation

Export Market Benefits Many U.S. Farmers. An estimated 70 million acres were required to produce the various quantities of agricultural products exported in fiscal year 1966/67. This is equivalent to one out of every four harvested acres in the United States. On a value basis, agricultural exports continued to be equivalent to 16 percent of total cash receipts from farm marketings,

as in fiscal year 1966. While the export market of agricultural commodities is important to all U.S. producers, it is particularly significant to the producers of certain commodities. For example, in fiscal year 1967 the export market provided an outlet for over 80 percent of the dried edible beans and peas; over two-fifths of the wheat, tallow, cotton, hides and skins, and hops; over a third of the tobacco, soybeans, grain sorghums, and dried prunes; and over a fifth of non-fat dry milk and raisins.

U.S. Agricultural Exports to the European Economic Community Decreased in Fiscal Year 1967. U.S. agricultural exports to the European Economic Community (EEC) were \$1,516 million in the fiscal year ending June 30, 1967. This was 5 percent below the \$1,593 million in 1965/66. West Germany was the principal market in the EEC, followed by the Netherlands, Italy, Belgium-Luxembourg, and France. Part of the exports to the Netherlands was re-exported, primarily to West Germany. Exports of commodities subject to the EEC variable levies decreased, while those not subject to the variable levies increased in fiscal year 1967 from a year earlier. Exports of variable-levy commodities totaled \$545 million compared with last year's \$736 million. A substantial drop in feed grains from the previous year was accompanied by declines in wheat, dairy products, turkeys, and poultry. Increased exports of rice, rye, and wheat flour partly offset the declines. Exports of feed grains to the EEC declined 32 percent to \$368 million from \$537 million in 1965/66, while wheat exports fell 6 percent. The smaller feed grain and wheat exports from the United States to the EEC occurred primarily because of tightening of supplies available for exports and partly because of increased supplies in the EEC market. Production of corn, barley, and oats was up in many producing countries. Agricultural exports not subject to variable levies totaled \$971 million compared with the previous year's \$857 million. Substantial gains in exports of soybeans, protein meal, cotton, and tobacco more than offset declines in fruits and vegetables, tallow, vegetable oils, and hides and skins.

Transporting Grain to Ports for Export. The bulk of the grain produced in the United States is grown over a wide area extending from the Pacific Northwest through the Dakotas, and southward into Texas. Farmers and grain dealers depend upon an efficient transportation system to move their products to domestic markets and to ports for export. Railroads are the principal carriers of grains and soybeans, but trucks and barges are significant competitors in certain sectors of the marketing channel. The characteristics of service have encouraged trucks and barges to work together, and they now compete effectively with railroads in providing through service from farm sources to ports of export. But this situation has not always existed. Prior to the decade of the 1940's, railroads transported practically all the grains. Increasing costs of rail transportation during the 1950's encouraged rapid development of truck and barge transportation, which increased sufficiently to bring about a downtrend in rail transportation rates beginning about 1958.

In addition to carrier competition, regional competition between port areas has further encouraged a lowering of transportation rates to ports for export. The opening of the St. Lawrence Seaway in 1959 provided a new route to the

overseas market from the Midwest. As a result of the new route, a round of reductions occurred in transportation rates to major port areas. Effective interregional competition and efficient transportation have contributed greatly to the overall competitive position of the United States in the world commercial market.

Transshipment of U.S. Agricultural Products Through Canada. Transshipments of U.S. grains and oilseeds through Canada between 1959 and 1965 had an estimated value of \$711 million. Transshipments (mainly of corn, soybeans, and wheat) reached a peak of \$176 million in 1965. Principal countries of destination for intransit grains and oilseeds through Canada were the Netherlands (another transshipment point), the United Kingdom, Spain, Japan, Yugoslavia, Israel, and Poland.

A portion of U.S. grains and oilseeds moving abroad from Great Lakes ports located at Duluth, Superior, Chicago, Toledo, Saginaw, and Milwaukee is transferred to Canadian elevators by bulk lake carrier and held under bond for later shipment to third countries on ocean-going vessels. Export declarations do not always reflect the country of destination at the time of export from the United States because the destination is not known. Leading transshipment points in Canada for U.S. commodities are Baie Comeau, Three Rivers, Montreal, and Quebec City.

U.S. Agricultural Trade With COMECON. Almost all of U.S. agricultural trade with centrally planned areas takes place with the Committee on Mutual Economic Cooperation (COMECON) members in Eastern Europe and the USSR. Although this trade is a small fraction of total U.S. foreign agricultural trade, its value has increased. Exports of U.S. farm products to the area in 1961-65 averaged \$151 million, compared with \$142 million in 1960 and only \$45 million in 1955-59. In addition, a growing proportion of total U.S. exports to COMECON consisted of farm products. A shift occurred in the principal destination of U.S. farm products shipped to the area. In 1964, the USSR replaced Poland as the leading COMECON importer of U.S. agricultural commodities. During the 1960's, the trend of U.S. farm exports to the other five members has been upward. Major suppliers of agricultural commodities to COMECON members in 1965 included Cuba, Canada, Egypt, India, Australia, France, Argentina, and Yugoslavia.

U.S. agricultural imports from COMECON increased in value in 1965 from previous years, but agricultural products declined as a proportion of total imports from the area. Canned hams from Poland dominate U.S. agricultural imports from COMECON.

Customs Duties on U.S. Agricultural Imports. Customs duties on U.S. agricultural imports averaged 5.6 percent for all commodities and 10.7 percent on dutiable agricultural items in 1966. Dutiable agricultural commodities had a value of \$2,363 million, or 53 percent of total agricultural imports. Duties collected on these items aggregated \$255 million, most of which were derived from specific rates. Tariffs were lowered on a number of agricultural

commodities in return for reductions by many other countries during the recently concluded "Kennedy Round" negotiations in Geneva, Switzerland. The tariff reductions will affect U.S. agricultural imports with a current value of \$639 million; reductions will take place on most items in equal steps over a 5-year period, beginning in January 1968.

C. World Agricultural Trade Statistics

Agricultural Trade of the European Economic Community: 1965 and 1966. Agricultural imports by the European Economic Community (EEC) totaled \$12,888 million in 1966, an increase of 7 percent from 1965. Exports of farm products from the EEC totaled \$5,784 million, an increase of 3 percent from 1965. Trade in agricultural products among the Common Market countries--intra-community trade--totalled about \$3.2 billion in 1966, 25 percent of their imports and 55 percent of the exports. This was 8 percent above the 1965 level. Intra-community trade grew slightly faster than trade with nonmember countries.

Impact of Central American Integration on U.S. Agricultural Exports. Economic integration among countries is probably the major economic change taking place in Latin America. Five countries of Central America--El Salvador, Guatemala, Costa Rico, Nicaragua, and Honduras--have integrated to form the Central American Common Market (CACM).

Per capita income in the CACM has been increasing at unprecedented levels, and this has resulted in larger agricultural imports. Though the United States continues to be the major supplier of agricultural products (\$38.5 million in 1965), the U.S. share of the market declined from 47 percent in 1959 to 37 percent in 1965. Intra-CACM import trade increased from 25 percent of the total in 1959 to 36 percent in 1965.

D. Exports Under Food for Freedom (Government-financed) Programs and Exports for Dollars. Exports under Food for Freedom Programs in fiscal year 1967 totaled \$1,578 million, only 2 percent less than those during the preceding year. These exports averaged \$1.6 billion a year during 1961-67 with little annual variation. In 1967, they represented 23 percent of total exports of farm products, compared with 24 percent a year earlier. Annual exports under Government-financed programs in recent years were about \$0.2 billion larger than the 1956-60 average. Food aid exports totaled nearly \$19 billion during the 13-year period since P.L. 480 was enacted. The U.S. food aid program has been an effective instrument for sharing the abundant agricultural production of the United States with the developing food-deficit countries to prevent hunger and malnutrition and to stimulate economic growth.

Export Payment Assistance to U.S. Agricultural Exports. Dollar exports totaled a record \$5,188 million in 1967, 77 percent of total exports. An estimated 57 percent of total exports were dollar sales without Governmental assistance and 20 percent were dollar exports with the assistance of export payments in cash or in kind or were sales from Government-owned stocks at less-than-domestic market prices. Exports under Government programs

represented 23 percent of total exports, including an estimated 12 percent of the total which was assisted by export payments, 7 percent which did not receive this form of assistance, and 4 percent which consisted of donations through voluntary relief agencies and Government-to-Government donations.

Export payments amounted to around \$300 million compared with nearly \$600 million in 1966. Two major factors contributed to the decline in total export payments from a year earlier; (1) The cotton program for the 1966-69 upland cotton crops, which makes it possible for cotton to move in domestic and export channels without resort to an equalization or an export payment, and (2) a reduction in U.S. exports of wheat, in addition to lower average export payments for this grain and the movement of certain varieties of wheat in export channels without export payments during part of the year.

During the 13-year period, 1955-67, 50 percent of U.S. agricultural exports have been unassisted commercial sales for dollars, 21 percent dollar sales with the assistance of export payments, and the remaining 29 percent, program exports.

Improvement in Sources for Reporting Exports Under Government-financed Programs and Completion of 12-Year Report on Food Aid Shipments. The tabulation of Government-to-Government donations authorized by Title II, P.L. 480, at full reimbursement cost to CCC resulted in numerous instances of apparent excesses of program shipments over total exports. A revaluation and retabulation by date of export of all shipments under this program for a 13-year period has been completed. The new series in which values for these donations are at net export value--values at port less any applicable export payment--is currently in use and has been incorporated into a report of exports under Government programs (commodity and country) for 12 fiscal years, 1955-66. This report is scheduled for publication in October 1967. A similar report for 12 calendar years, 1955-66, for which the statistical material is completed, will follow.

Through conferences with the Bureau of the Budget, the Office of Budget and Finance of the Department, the Balance of Payments Division of the Department of Commerce, the Foreign Agricultural Service, and the Agricultural Stabilization and Conservation Service, a method was worked out for reporting donations through voluntary relief agencies, which would result in greater conformity of USDA reports with reports of relief shipments by Census. As a result of the meetings, a data processing system was set up in the field offices of ASCS which supply the commodities for donation. This system has been used since December 1966 and at present the extension of the system to the reporting of donations under the Government-to-Government program is in the trial stage. This data processing system will be integrated with the overall data processing system for which the contract has been awarded for FAS and ERS.

E. Analysis of World Agricultural Prices. The price index numbers of principal U.S. agricultural exports and imports for the four quarters ending during the fiscal year 1967 and for the four 12-month periods ending at the same time

as the quarters, generally showed increases above the same period one year earlier. The increase in export prices tended to exceed the increase in import prices; thus, the terms of trade were favorable to the United States.

An analysis of price developments, published in The World Agricultural Situation, Review of 1966 and Outlook for 1967, contrasted the generally declining trend in world agricultural prices at the wholesale and export levels with the rise in the prices of manufactured goods, consumer goods and, in particular, retail food prices. Specific movements of world agricultural prices, however, were not always in line with the general downward trend. There was a marked price pickup early in 1966 in contrast to the decline later in the year. Moreover, some individual commodity prices were quite strong.

F. Estimation of Costs and Benefits of Agricultural Protectionism. Work completed under contract with the University of Minnesota consists of three publications, about to be released:

An USDA Technical Bulletin, Measures of the Degree and Cost of Economic Protection of Agriculture in Selected Countries, presents measures of the degree of protection of many agricultural commodities in eight developed countries over time in the form of percentages which the domestic price-world price differentials are relative to domestic prices. Cost of economic protection is measured as welfare cost. With the help of the concepts of producers' surplus and consumers' surplus, production and consumption cost of protection was obtained. In geometric and mathematical analyses, this cost was shown to be a function of the height of the tariff, the demand and supply elasticities and the values of domestic consumption and production of the protected commodities.

A study, Pricing in the World Feed Grain Market, analyzes the role of the United States as the world's dominant world feed grain market supplier. That role is shown to resemble that of a monopolist to some extent. On the other hand, the insulation of the world's major feed grain importers from the effects of international price changes limits the market effect of the dominant supplier.

Finally, the study, Nonequilibrium Fixed-Price Schemes in Agricultural Trade, presents geometric formulations of an equilibrium world trade model and of the Pisani-Baumgartner Plan.

G. Other. At the request of the Agriculture Subcommittee of the Senate Appropriations Committee, the foreign economic aspects of changes in the farm labor supply were analyzed and Part VI, Foreign Economic Aspects, to the study, Farm Labor in A Changing Agriculture, was contributed. A more detailed background investigation was released under the title, Effects of Changes in Use of Seasonal Workers on U.S.-Mexican Agricultural Trade and Balance of Payments. Twelve crops used four-fifths of the foreign seasonal hired labor employed in all farmwork in the United States in 1964. Developments affecting two of these crops may be more directly related than any others to the

termination of the use of most of such labor, (1) the sharp drop in white asparagus production and in canned asparagus exports and (2) the decline in the domestic production of strawberries for processing and the continued increase in imports of frozen strawberries from Mexico.

PUBLICATIONS -- USDA AND COOPERATIVE PROGRAMS

A. U.S. Agricultural Trade Statistics

(1) Foreign Agricultural Trade of the United States. "Export Highlights," "Import Highlights," and "Digest of Foreign Agricultural Trade of the United States." Oct. 1965-Sept. 1966. Average 6 pp., 12 issues.

(2) _____. "U.S. Foreign Agricultural Trade by Countries, Calendar Year 1965." Supplement. Nov. 1966, 91 pp.

(3) _____. "Export Fact Sheet, Fiscal Year 1965-66," Nov. 1966. (Reprinted as ERS-For. 175, 5 pp.)

(4) _____. "Import Fact Sheet, Fiscal Year 1965-66," Nov. 1966. (Reprinted as ERS-For. 175, 5 pp.)

(5) _____. "U.S. Foreign Agricultural Trade by Commodities, Fiscal Year 1965-66." Supplement. Feb. 1967, 40 pp.

(6) _____. "U.S. Foreign Agricultural Trade by Countries, Fiscal Year 1965-66." Supplement. May 1967, 92 pp.

(7) _____. "U.S. Foreign Agricultural Trade by Commodities, Calendar Year 1966." Supplement. July 1967, 40 pp.

B. U.S. Agricultural Trade Situation

(8) _____. "Exports Compared With Imports, Fiscal Year 1965/66," Nov. 1966, 3 pp.

(9) _____. "Imports of Fruits and Vegetables Under Quarantine, Fiscal Year 1965/66," Feb. 1967, 18 pp.

(10) _____. "Record Agricultural Trade Balance Achieved in 1966 Despite Increase in Imports," April 1967, 9 pp.

(11) _____. "Exports Compared With Imports, Calendar Year 1966," May 1967, 3 pp.

(12) _____. "U.S. Exports by Destination, Calendar Years 1961-66," Sept. 1967, 25 pp.

(13) _____. "U.S. Agricultural Imports Totaled \$4.5 Billion in Fiscal Year 1966/67," Sept. 1967, 10 pp.

(14) _____. "Index to Foreign Agricultural Trade of the United States, July 1966-June 1967," June 1967, 5 pp.

- (15) Corley, Joseph R. "U.S. Agricultural Exports to the European Economic Community Reach New Record in 1966," March 1967, 6 pp.
- (16) _____. "U.S. Agricultural Exports to the European Trade-Bloc and Non-Trade-Bloc Countries," May 1967, 6 pp.
- (17) _____. "Transporting Grain to Ports for Export," July 1967, 11 pp.
- (18) _____. "U.S. Agricultural Exports Reach Another Record Level in 1966/67," Aug. 1967, 7 pp.
- (19) Kallemeyn, Norman R. "Larger Commercial Exports to European Economic Community and Japan Contributed to Record Exports in 1965/66," March 1967, 18 pp.
- (20) Rahe, Dewain H. "U.S. Agricultural Exports Reach All-Time High of \$6.9 Billion in Calendar Year 1966," March 1967, 9 pp.
- (21) Tontz, Robert L. and Lemon, Isaac E. "U.S. Agricultural Shares by Regions and States, Fiscal Year 1965/66 with Comparisons," Nov. 1966, (Reprinted as ERS-For. 174, 17 pp.)
- (22) _____ and Rahe, Dewain H. "Outlook Highlights for U.S. Agricultural Exports, Fiscal Year 1966/67," Dec. 1966, 4 pp.
- (23) _____ and Lemon, Isaac E. "Agricultural Exports are Becoming More Important to U.S. Agriculture," Feb. 1967, 8 pp.
- (24) Warden, Thomas A. "Transshipments of U.S. Agricultural Products Through Canada," Dec. 1966, 21 pp.
- (25) _____. "U.S. Agricultural Trade with COMECON," April 1967, 12 pp.
- (26) _____. "Customs Duties on U.S. Agricultural Imports," Sept. 1967, 12 pp.

C. World Agricultural Trade Situation

- (27) Corley, Joseph R. "The European Economic Community: Agricultural Exports and Imports," Jan. 1967. (Reprinted as ERS-For. 182, 19 pp.)
- (28) _____. "Agricultural Trade of the European Economic Community: 1965 and 1966," Sept. 1967, 13 pp.
- (29) Kallemeyn, Norman R. "Impact of Central American Integration on U.S. Exports," Feb. 1967, 8 pp.

D. Exports Under Food for Peace (Government-financed) Programs

(30) DeBlois, Eleanor N. "Increased Dollar Exports in Fiscal Year 1965/66 Bring U.S. Exports of Farm Products to Record Level for Third Consecutive Year," Nov. 1966. (Reprinted as ERS-For. 177, 24 pp.)

(31) _____. "Export Payment Assistance to U.S. Agricultural Exports, Fiscal Year 1965/66," June 1967, 11 pp.

(32) Foreign Agricultural Trade of the United States. "Commercial and Government Program Export Highlights, July-September 1966," Feb. 1967, 6 pp.

(33) _____. "Commercial and Government Program Export Highlights, July-December 1966," June 1967, 7 pp.

(34) _____. "Commercial and Government Program Export Highlights for July-March 1966/67," Aug. 1967, 8 pp.

E. Analysis of World Agricultural Prices

(35) Hirsch, Hans G. "Review of 1966 Price Developments in the Foreign Agricultural Trade of the United States," FATUS, Feb. 1967. (Reprinted as ERS-For. 184, 6 pp.)

(36) _____. "U.S. Agricultural Export Prices Sharply Up During Fourth-Quarter 1966," FATUS, April 1967, 4 pp.

(37) _____. "First-Quarter 1967 U.S. Export and Import Prices Up," Aug. 1967, 3 pp.

(38) World Agricultural Situation, Review of 1966 and Outlook for 1967, ERS-For. 33, Jan. 1967. Sections on Trade and Price Developments, pp. 7-11, 5 pp.

G. Other

(39) Hirsch, Hans G. Part VI, Foreign Economic Aspects, in Farm Labor in a Changing Agriculture. Senate Hearings. Department of Agriculture and Related Agencies Appropriations, H.R. 10509, 90th Congress, 1st Session, FY 1968, Part 4, pp. x, 55-66, 72, 86-94, 23 pp.

(40) _____. Effects of Changes in Use of Seasonal Workers on U.S.-Mexican Agricultural Trade and Balance of Payments. ERS-For. 195, Aug. 1967, 55 pp.

Line Project Check List--Reporting Year October 1, 1966 to September 30, 1967

Work and Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Project Incl. in	
			Summary of Progress (Yes-No)	Area and Subheading
FDT 1	Foreign Economic Development Research	Washington, D.C.	Yes	1-A,B,C,D,E
FDT 1-1	Analysis of the role of agriculture in foreign economic development and growth	Washington, D.C.	Yes	1-A,B
FDT 1-2	Analysis of ways of increasing farm productivity to meet world food needs	Washington, D.C.	Yes	1-A,B
FDT 1-3	Effects of foreign economic development on demand for U.S. farm products	Washington, D.C.	Yes	1-C
FDT-0-0-1 (AID)	Factors associated with differences and changes in agricultural output in developing countries	Washington, D.C.	Yes	1-A
FDT-0-0-2 (AID)	Factors associated with differences and changes in agricultural output and productivity in Greece	Washington, D.C. and Greece	No	1-A
FDT-0-0-3 (AID)	Factors associated with differences and changes in agricultural output and productivity in Taiwan	Washington, D.C. and Taiwan	No	1-A
FDT-0-0-4 (AID)	Factors associated with differences and changes in agricultural output and productivity in Mexico	Mexico	No	1-A
FDT-0-0-5 (AID)	Factors associated with differences and changes in agricultural output and productivity in Nigeria	Nigeria	No	1-A
FDT-0-0-6 (AID)	Factors associated with differences and changes in agricultural output and productivity in Brazil	Brazil	No	1-A
FDT-0-0-7 (AID)	Factors associated with differences and changes in agricultural output and productivity in India	India	No	1-A
FDT-0-0-8 (AID)	Factors associated with differences and changes in agricultural output and productivity in Colombia	Colombia	No	1-A

Line Project Check List--Reporting Year October 1, 1966 to September 30, 1967

Work and Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Project Incl. in	
			Summary of Progress (Yes-No)	Area and Subheading
FDT 1-9-09	Factors associated with differences and changes in agricultural output and productivity in Brazil	Brazil (Rio Grande de Sul)	No	1-A
FDT 1-9-52	Factors associated with differences and changes in agricultural output and productivity in Brazil	Wisconsin (Madison)	No	1-A
FDT 1-11-2 <u>1/</u>	Factors associated with differences and changes in agricultural output and productivity in Colombia	Colombia (Bogota)	No	1-A
FDT-FRA 0-0-1 (AID)	Demand prospects for agricultural exports of less developed countries	Washington, D.C.	Yes	1-D
E25-ERS-2 (k)	Programming for dryland agriculture in the Duero Valley, Spain	Madrid Spain	No	1-E
E25-ERS-3 (k)	A forecast of agricultural development in the irrigated areas of Spain	Madrid Spain	No	1-E
A10-ERS-10 (k)	Comprehensive programming of regional economic development	Rehovat Israel	Yes	1-E
A10-ERS-17 (k)	Comparative analysis of processes of agricultural development in selected countries	Jerusalem Israel	No	1-E
A7-ERS-11 (k) <u>2/</u>	Impact of changing conditions on grain marketing in Punjab, India	Ludhiana India	Yes	1-E
A7-ERS-12 (k)	Impact of land reforms in Western India on structure of land holdings and farm production potential	Bombay India	No	1-E
A7-ERS-14 (k)	The structure and behavior of farm prices in India	New Delhi India	No	1-E
S5-ERS-3 (k) <u>2/</u>	Economic aspects of the production, marketing and utilization of corn and other feed grains in Colombia	Medellin Colombia	Yes	1-E

Line Project Check List--Reporting Year October 1, 1966 to September 30, 1967

Work and Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Project Incl. in	
			Summary of Progress (Yes-No)	Area and Subheading
E8-ERS-1 (k) <u>2/</u>	The relation of management and planning to success in farming	Helsinki Finland	Yes	1-E
E8-ERS-2 (k) <u>2/</u>	Study of the economics of alternative use of land for agriculture and forestry	Helsinki Finland	No	1-E
A10-ERS-2 (k) <u>2/</u>	Evaluation of long-term programs for agriculture with respect to require- ments and supply of capital	Jerusalem Israel	Yes	1-E
A10-ERS-3 (k) <u>2/</u>	Quantitative analysis of optimal water resource development and allocation	Jerusalem Israel	Yes	1-E
A10-ERS-9 (k) <u>2/</u>	Methods of compilation of agricultural statistics in Israel	Jerusalem Israel	Yes	1-E
E25-ERS-1 (k) <u>2/</u>	Food consumption in relation to family income in the rural population in Spain	Madrid Spain	No	1-E
FDT 2	Foreign Economic Export Programs Research	Washington, D.C.	Yes	2-A,B,C,D
FDT 2-1	Economic effects of P.L. 480 programs in recipient countries	Washington, D.C.	Yes	2-A
FDT 2-2 <u>1/</u>	Food nutrient sources and prepared food products for foreign and domestic food distribution programs	Washington, D.C.	Yes	2-B
A7-FDT-1	Analysis and assessment of the eco- nomic effects of the P.L. 480 program in India	New Delhi India	No	2-A
E25-FDT-1	Analysis and assessment of the eco- nomic effects of the P.L. 480 program in Spain	Madrid Spain	No	2-A
FDT 3	International Monetary Research	Washington, D.C.	Yes	3-A,B,C

Line Project Check List--Reporting Year October 1, 1966 to September 30, 1967

Work and Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Project Incl. in	
			Summary of Progress (Yes-No)	Area and Subheading
FDT 3-1	Agricultural development banks and credit programs	Washington, D.C.	Yes	3-C
FDT 3-2	The contribution of U.S. agricultural trade including P.L. 480 transactions to balance of payments	Washington, D.C.	Yes	3-B
FDT 3-3	External financial developments abroad including P.L. 480 recipient countries	Washington, D.C.	Yes	3-A,F
FDT 4	Trade Statistics and Analysis	Washington, D.C.	Yes	4-A,B,C,D, E,F
FDT 4-1	Analysis of U.S. agricultural trade	Washington, D.C.	Yes	4-A,B
FDT 4-2	Analyses and development of world agricultural trade data	Washington, D.C.	Yes	4-C
FDT 4-3	Exports under food aid (Government- financed) programs	Washington, D.C.	Yes	4-D
FDT 4-4	Analysis of world agricultural prices	Washington, D.C.	Yes	4-E
FDT 4-5	Agricultural protectionism and inter- national trading arrangements	St. Paul Minnesota	Yes	4-F
FDT 4-6 1/	Economic impact of synthetic products on U.S. and world agricultural trade	Washington, D.C.	No	4-G
FDT 5	International Trade Developments and Problems Research	Washington, D.C.	Yes	3-D,E
FDT 5-1	Export prices of major agricultural commodities entering world trade	Washington, D.C.	No	3-E
FDT 5-2	Potential meat and grain trade of the European Economic Community (EEC)	Washington, D.C.	Yes	3-D
E10-FDT-1 (a) 2/	Research on import demand for oilseeds and oilseed products in countries of the European Economic Community	Göttingen, Germany; EEC Countries, & Washington, D.C.	Yes	3-D

Line Project Check List--Reporting Year October 1, 1966 to September 30, 1967

Work and Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Project Incl. in Summary of Progress (Yes-No)	Area and Subheading
E9-FDT-1 (c)	Effects of current changes in the live-			
<u>2/</u>	stock and grain economy of France on foreign trade patterns	Paris France	Yes	3-D
EO5-FDT-1 (a)(c)	Effects of changing price and production:			
	conditions in the countries of the	Michigan State U.,		
	European Economic Community on agri-	West Germany, &		
	cultural output	Italy	Yes	3-D
FDT 5-6	Effects of regional trade groups of			
	countries on international trade	Washington, D.C.	Yes	3-D
FDT-FRA 0-0-1 (AID)	Demand prospects for agricultural			
	exports of less developed countries	Washington, D.C.	Yes	3-E
FDT 5-7 C	Effects of changing trade systems in			
<u>1/</u>	Latin America on U.S. agricultural	Gainesville		
	trade	Florida	Yes	3-D

1/ Initiated during reporting period

2/ Terminated during reporting period

